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(54) **Device for dispensing food products, such as bread and the like**

(57) A device (1) for dispensing food products, such as bread and the like, comprising an inclined plane (11) that is adapted to convey a food product to chute means (2) adapted to dispense the food product, the inclined plane (11) being provided with an opening (12) arranged in a position that lies above the chute means (2), the chute means being blended in an inclined manner with a wall (3) to which means (5) for shaking the food product are connected, the inclined plane (11) abutting against the wall (3), means (4) for moving the chute means (2) and the wall (3) being provided in order to move the wall (3) away from the inclined plane (11) so as to enlarge the opening (12) of the inclined plane (11) in order to allow the fall of the food product by gravity onto the chute means (2).

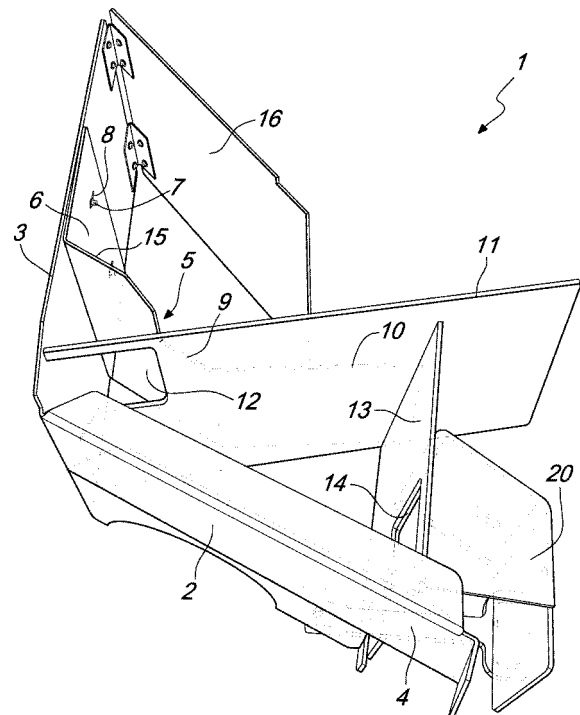


Fig. 1

Description

[0001] The present invention relates to a device for dispensing food products, such as bread and the like. More particularly, the invention relates to a device for dispensing food products that allows the operator to avoid touching with his hands the food to be taken and sold to customers.

[0002] As is known, for example in shops, shopping centers and the like, the need is felt to be able to sell loose food products, such as bread and the like, without the sales operator coming into contact with the food with his hands.

[0003] In particular, the operator should be required to wear protective gloves when he comes into contact with food and to remove them when he performs other operations. Of course, this entails inconvenience for the operator, who generally abandons this practice soon and touches the food with his bare hands while also performing the other normal operations for his work, thereby causing hygiene problems due to the contact of the food with the hands of the operator.

[0004] For example, in the case of bread, the sales operator either wears gloves or uses tongs to pick up the pieces of bread from an appropriately provided container, always however with a certain inconvenience in operation.

[0005] The aim of the present invention is to provide a device for dispensing food products that allows the operator to avoid touching the products with his hands, with advantages for hygiene.

[0006] Within this aim, an object of the present invention is to provide a device for dispensing food products that allows the operator, though not wearing specifically provided gloves, to pick up the food to be sold to customers without touching it with his hands and thus ensuring integrity of the food product.

[0007] Another object of the present invention is to provide a device for dispensing food products, particularly bread and the like, that allows to dispense food with a simple manual movement by the operator.

[0008] Another object of the present invention is to provide a device for dispensing food products that allows users to pick up the food product autonomously, without the aid of dedicated operators.

[0009] Still another object of the present invention is to provide a device for dispensing food products that is highly reliable, relatively simple to provide and at competitive costs.

[0010] This aim, and these and other objects that will become better apparent hereinafter are achieved by a device for dispensing food products, such as bread and the like, **characterized in that** it comprises an inclined plane that is adapted to convey a food product to chute means adapted to dispense said food product, said inclined plane being provided with an opening arranged in a position that lies above said chute means, said chute means being blended in an inclined manner with a wall

to which means for shaking the food product are connected, said inclined plane abutting against said wall, means for moving said chute means and said wall being provided in order to move said wall away from said inclined plane so as to enlarge said opening of said inclined plane in order to allow the fall of said food product by gravity onto said chute means.

[0011] Further characteristics and advantages of the invention will become better apparent from the description of a preferred but not exclusive embodiment of the device according to the present invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a bottom perspective view of the device according to the invention;

Figure 2 is a side elevation view of the device according to the invention in a first operating configuration;

Figure 3 is a side elevation view of the device according to the invention in a second operating configuration;

Figure 4 is a view of a second embodiment of the device according to the invention, in a first operating configuration.

[0012] With reference to the figures, the device for dispensing food products according to the invention, generally designated by the reference numeral 1, comprises, accommodated within a container element 100, chute means 2 for dispensing the food, such as bread or the like, which are blended with a wall 3 that forms a substantially obtuse angle with the chute means 2.

[0013] The wall 3 is connected, so as to be inclined, to a back wall of the container element 100.

[0014] Conveniently, movement means 4, constituted for example by a lever element, are connected to the chute 2, so as to act on the chute 2 and, due to the elasticity of the material of which such chute is made, move the wall 3 so as to deflect it, moving it away, as explained in detail hereinafter.

[0015] Conveniently, means 5 for accumulating the food are connected to the wall 3 and are conveniently provided for example by an element that comprises a first wall portion 6 that is adapted to be connected to the wall 3, by way of coupling means 7 that can slide within slots 8 formed in the wall 6. The wall 6 is blended with an inclined portion 15, which is provided with a cutout 9; such portion 15 is blended with another portion 10, so that the wall 6, the inclined portion 15 and the portion 10 form substantially obtuse angles between them.

[0016] Conveniently, a plane 11 provided with an opening 12 is arranged so as to be positioned in contact with the wall 3, in a position that lies above the chute 2, and is angled with respect to the chute 2, with the portion 10 of the accumulation means 5 that makes contact with the plane 11.

[0017] Advantageously, the inclined plane abuts

against the wall 3.

[0018] The opening 12 of the inclined plane has such dimensions that it does not allow the passage of the food product.

[0019] Conveniently, by acting on the lever means 4 and in particular by pushing the lever means toward the wall 3, the wall 3 is made to flex due to the elasticity of the material of which it is made, but most of all thanks to the fact that it is connected in an inclined manner to the back wall of the container element, with the result that the accumulation means 5 are also moved jointly with the wall 3, so as to increase the dimension of the opening 12 of the inclined plane.

[0020] Since the opening 12 of the inclined plane has three sides defined within the inclined plane and the fourth side defined by the wall 3, when such wall is moved, flexing it, the side of the opening 12 that it defines moves away from the remaining sides of the opening 12, thus enlarging the opening 12.

[0021] Moreover, as a consequence of this movement, the cutout 9 of the accumulation means 5 coincides substantially with the opening 12 of the plane 11, so that the bread shaken by the accumulation means 5 falls through the opening 12 of the plane 11 and is channeled along the chute 2, to be dispensed from the end of the chute and then fall into an appropriately provided bag, which is placed beforehand below the chute 2.

[0022] Conveniently, the plane 11 is supported in its inclined position by supporting means 13, which are provided with an opening 14 that allows passage of the bread along the chute 2, the opening 14 being arranged so as to straddle the chute 2.

[0023] Finally, protection means 20 are provided in order to protect the output end of the chute 2, allowing the bread to fall by gravity from the accumulation means 5 to the chute 2 and then to the bag provided at the output end of the chute 2.

[0024] In particular, the bag can be engaged between the end lip of the chute 2 and the protection means 20, so that as a consequence of the actuation of the lever means and therefore of the movement of the chute 2 the mouth of the bag can open to accommodate the bread conveyed along the chute 2.

[0025] Advantageously, the bag can be supported by supporting handles connected to the protection means 20.

[0026] Conveniently, it is possible to provide deflector means 16, which are hinged at the upper end of the back wall of the container element 100.

[0027] Such means allow to channel the bread in a guided and orderly fashion toward the output opening, in order to convey it along the chute 2, making it fall by gravity onto the chute 2, when the operator performs a shaking movement by acting on the lever means 4.

[0028] By using the device according to the invention, therefore, the operator can, by actuating the lever means 4, make the food product such as bread or the like fall by gravity through the opening 12 of the inclined plane

11, to move the food along the chute 2, all without touching the food product with his hands.

[0029] In practice it has been found that the device according to the present invention fully achieves the intended aim and objects, since it allows to ensure the absolute hygiene of the food product, preventing the operator from being able to touch it with his hands in any manner, and at the same time allows the operator to provide the bread or food product in general to the customer, without having to wear necessarily gloves in order to be able to touch the food product with maximum hygiene.

[0030] More particularly, the device according to the invention can allow the end consumer to pick up directly the desired amount of bread, in a self-service mode, without requiring a dedicated operator.

[0031] Moreover, the device according to the invention allows to preserve the food product against contact with dust, flies and the like.

[0032] The device thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0033] Thus, for example, the lever means 4 can be connected to the chute 2 and can be actuated by traction so as to move the chute 2 and the corresponding wall 3 toward the user, with the effect of lifting the accumulation means 5, allowing the bread to fall toward the opening 12 of the plane 11.

[0034] The inclined plane 11 instead remains fixed, inserted like a shelf within millings defined in the side walls of the container element 100.

[0035] In this case, the opening 12 has such dimensions as to allow the passage of bread through it.

[0036] Conveniently, the chute means 2 and the wall 3 can be made of rigid material, return means being provided in order to return the chute means and the wall to the inactive configuration following the end of the movement of the lever means.

[0037] Conveniently, the return means can be for example springs, elastic bands, motorized pistons and the like.

[0038] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements and to the state of the art.

[0039] The disclosures in Italian Patent Application no. MI2008A001371, from which this application claims priority, are incorporated herein by reference.

[0040] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Device (1) for dispensing food products, such as

- bread and the like, **characterized in that** it comprises an inclined plane (11) that is adapted to convey a food product to chute means (2) adapted to dispense said food product, said inclined plane (11) being provided with an opening (12) arranged in a position that lies above said chute means (2), said chute means (2) being blended in an inclined manner with a wall (3) to which means (5) for accumulating the food product are connected, said inclined plane (11) abutting against said wall (3), means (4) for moving said chute means (2) and said wall (3) being provided in order to move said wall (3) away from said inclined plane (11) so as to enlarge said opening (12) of said inclined plane (11) in order to allow the fall of said food product by gravity onto said chute means (2).
2. The device according to claim 1, **characterized in that** said wall (3) is connected to an end wall of a container that is adapted to accommodate said device.
3. The device according to claim 1, **characterized in that** said accumulation means (5) are provided with a recess (9) for the passage of the food product.
4. The device according to claim 1, **characterized in that** said movement means comprise lever means (4) connected to said chute means (2), in order to push at said chute means (2) so as to deflect said wall (3) blended with said chute means (2), said wall (3) being adapted to entrain said accumulation means (5) in its movement.
5. The device according to one or more of the preceding claims, **characterized in that** said inclined plane (11) is supported by supporting means (13) that are arranged at a lower end of said chute means (2), said supporting means (13) being provided with an opening (14) that is suitable to straddle said chute means (2), in order to allow the passage of said food along said chute means (2).
6. The device according to one or more of the preceding claims, **characterized in that** said chute means (2) are provided, at an output end of said chute means, with protection means (20) adapted to allow the protection of said output ends of said chute means (2).
7. The device according to one or more of the preceding claims, **characterized in that** it comprises baffle means (16) adapted to be connected to an upper end of said wall (3) blended with said chute means (2).
8. The device according to one or more of the preceding claims, **characterized in that** said inclined plane (11) is accommodated, like a shelf, in milled regions formed within the side walls of said container.
9. The device according to one or more of the preceding claims, **characterized in that** said chute means (2) and said wall (3) are made of a material that has elasticity.
10. The device according to one or more of the preceding claims, **characterized in that** said chute means (2) and said wall (3) are made of rigid material, return means being provided in order to return said chute means and said wall to the inactive configuration after stopping the movement of said movement means (4).

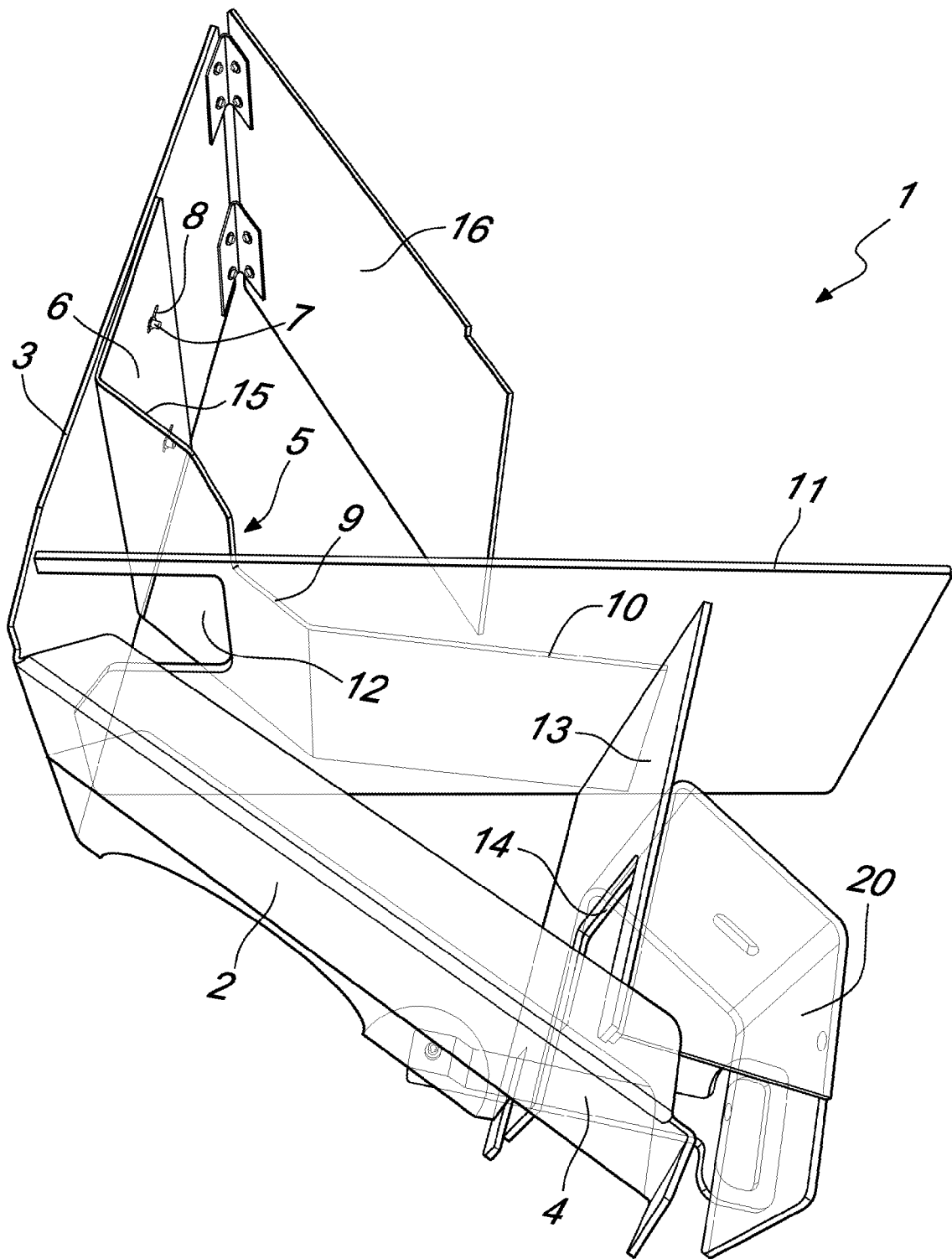
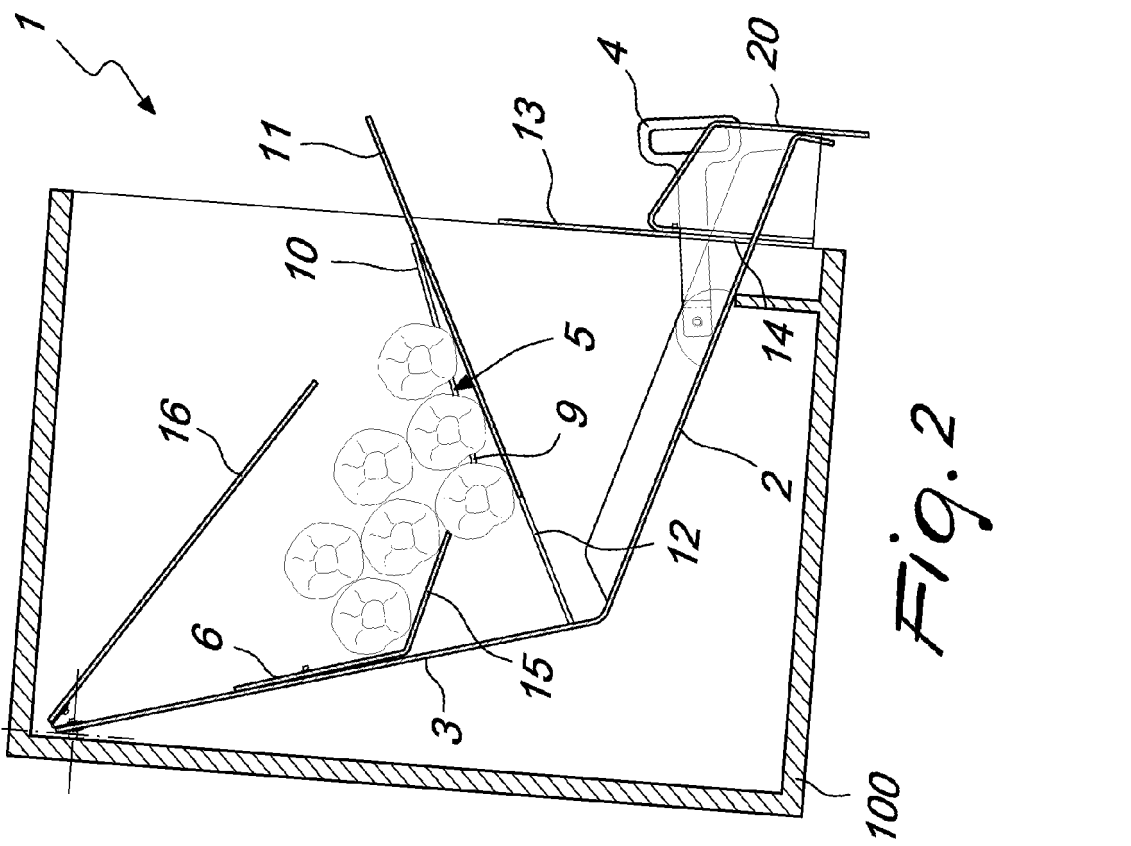
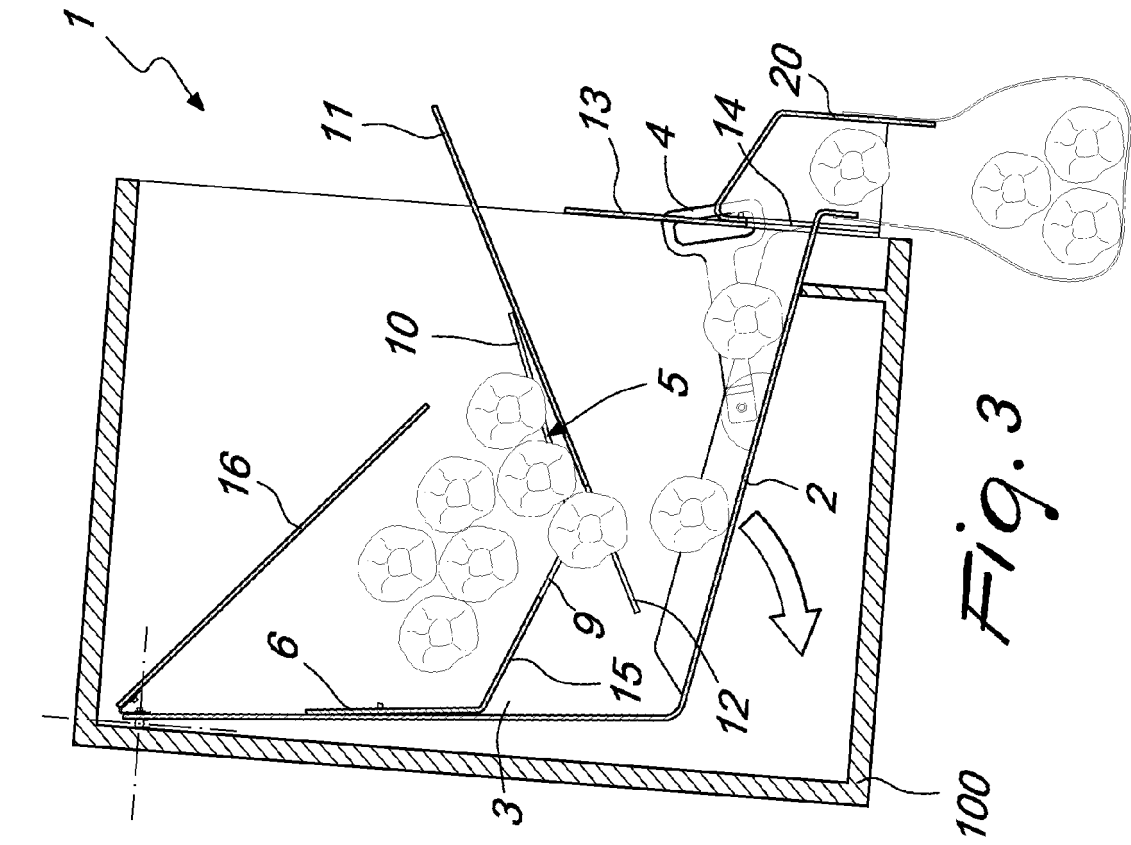


Fig. 1



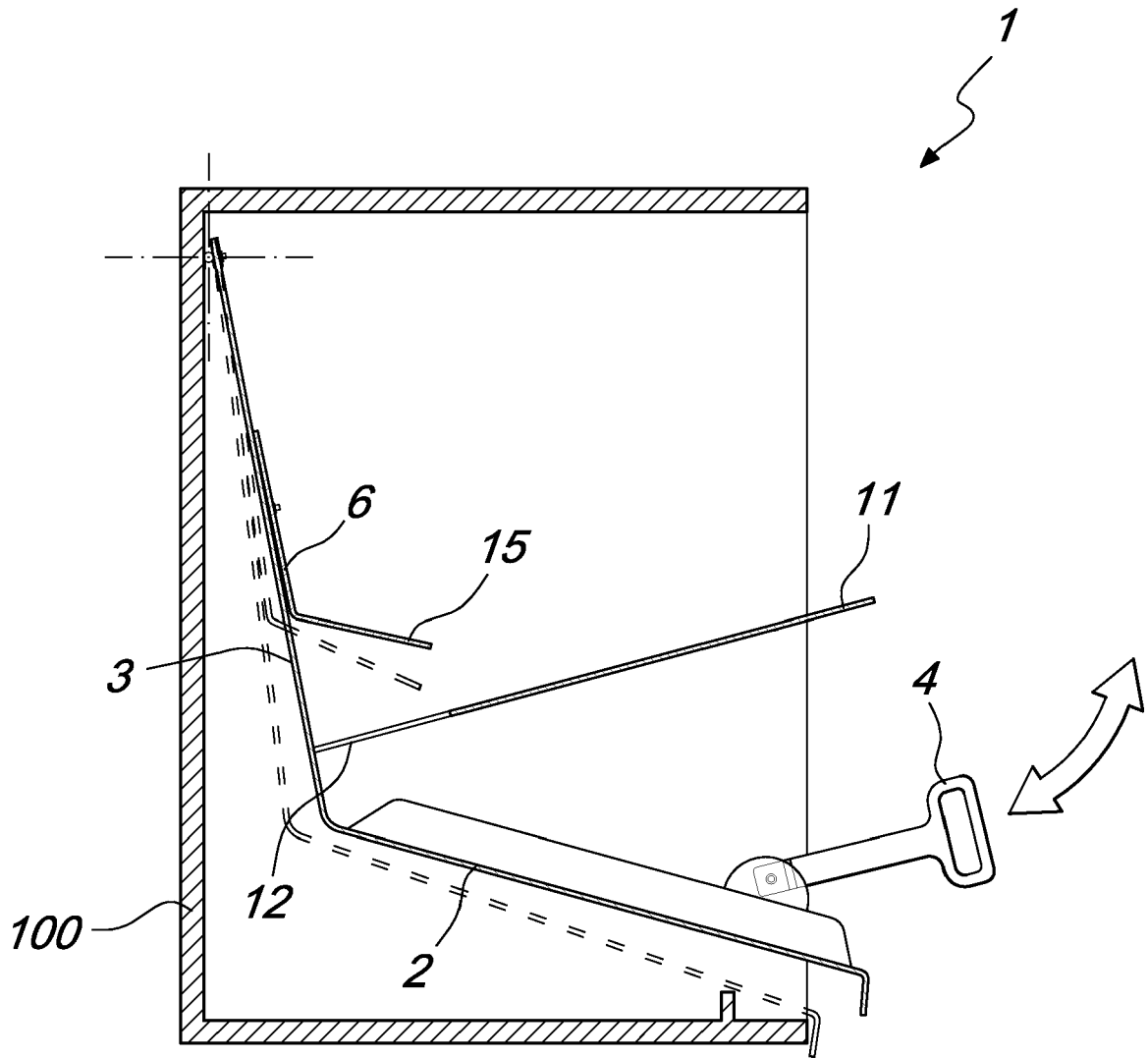


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 09 16 3544

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 September 2009	Examiner Vehrer, Zsolt
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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